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|  Independent Verification & Validation Facility | Project Startup | IVV 09-8 Revision: Basic Effective Date: September 2002 |
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| APPROVAL SIGNATURES | | DATE |
|---|-------------------------------|----------|
| Gregory Blaney (original signature on file) | QMS Management Representative | 09/11/02 |

| REVISION HISTORY | | | |
|------------------|-----------------------|---------------|----------------|
| Rev No. | Description of Change | Author | Effective Date |
| Basic | Initial Release | John Marinaro | 09/12/02 |

| REFERENCE DOCUMENTS | |
|---------------------------------|---|
| Document Number | Document Title |
| Current versions posted by NASA | Federal Acquisition Regulations and Supplements |
| NPD 7120.4 | NASA Policy Directive for Program/Project Management |
| NPG 1441.1 | NASA Records Retention Schedule |
| IVV 01/02 | Management Responsibility and Authority for Quality System Effectiveness System Level Procedure |
| IVV 09-1 | Independent Verification and Validation System Level Procedure |
| IVV 09-2 | Independent Assessments System Level Procedure |
| IVV 14 | Corrective and Preventative Action System Level Procedure |
| IVV 16 | Control of Quality Records System Level Procedure |
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1.0 Purpose

The purpose of this procedure is to establish a consistent and documented method of performing the project startup process at the NASA Independent Verification and Validation (IV&V) Facility.

2.0 Scope

The scope of this procedure is subservient to and adheres to the higher level NASA NPD 7120.4, the NASA Policy Directive for Program/Project Management.

This procedure applies to all IV&V Facility personnel who perform project startup activities for Independent Verification and Validation (IV&V) or Independent Assessment (IA) tasks for the IV&V Facility.

3.0 Definitions

3.1 Project Manager (PM)

IV&V Facility civil servant personnel appointed by the Deputy Director who perform a project management function.

3.2 Senior Lead

IV&V Facility civil servant personnel appointed to act as the primary point of contact for their assigned NASA Center.

3.3 Independent Verification and Validation (IV&V)

A core process function performed by the IV&V Facility. See System Level Procedure IVV 09-1 for more explanation and detail.

3.4 Independent Assessments (IA)

A core process function performed by the IV&V Facility. See System Level Procedure IVV 09-2 for more explanation and detail.

3.5 Project

For this SLP, a project is either any IV&V or IA task being performed by the IV&V Facility for a customer or a NASA development project (depending on context).

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3.6 Contracting Officer's Technical Representative (COTR)

A NASA civil servant responsible for the technical management of a contract and other duties as described in the NASA Federal Acquisition Regulations (FARs) and Supplements.

3.7 Formal Agreement (FA)

A document used to identify the managerial, technical and business aspects of an agreement between the IV&V Facility and a customer to perform an IV&V or IA task.

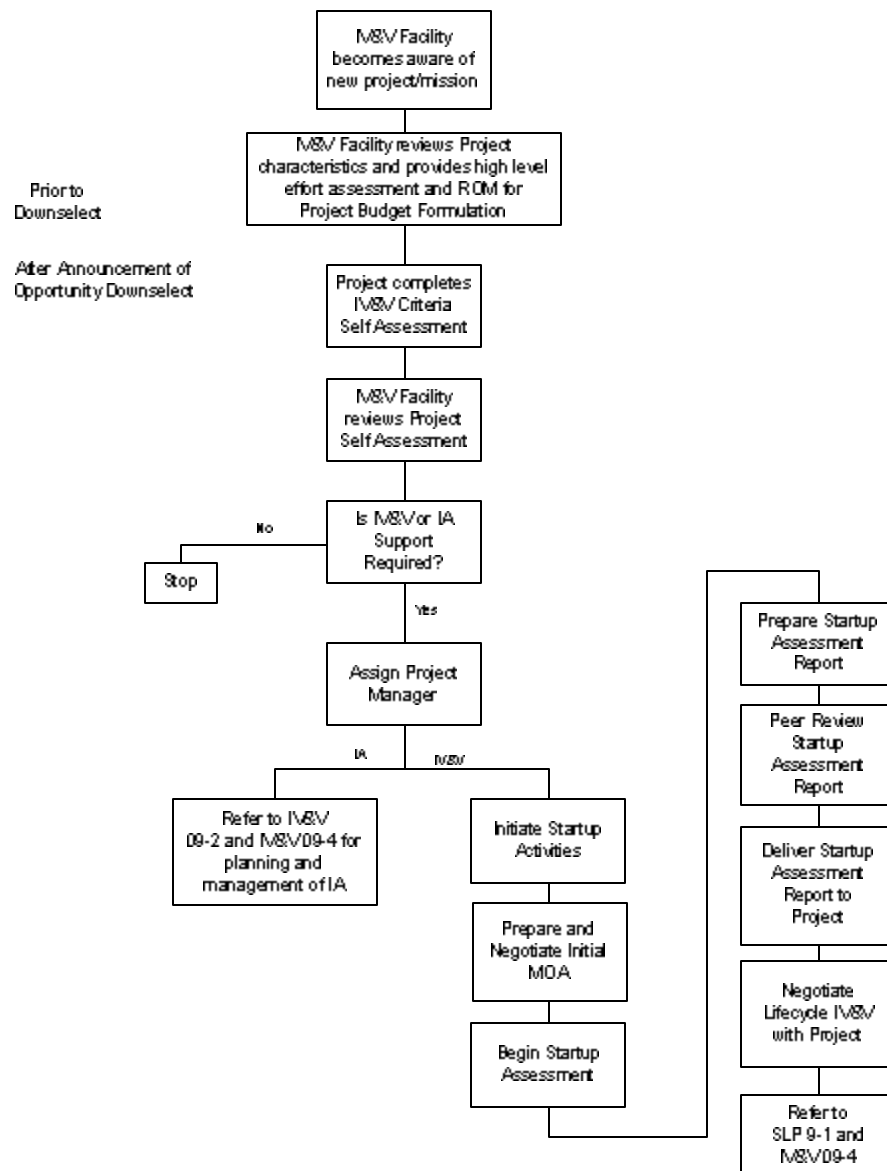
3.8 Acronyms

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| COTR | Contracting Officer's Technical Representative |
| IV&V | Independent Verification and Validation |
| FA | Formal Agreement |
| IA | Independent Assessment |
| MOA | Memorandum of Agreement |
| PM | Project Manager |
| ROM | Rough Order of Magnitude |
| SAR | Startup Assessment Report |

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4.0 Flowchart

IV&V Startup Process



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5.0 Responsibilities

Responsibilities are defined in Section 6.0 of this SLP.

6.0 Procedure

This procedure establishes a consistent and documented method of performing project startup at the NASA Independent Verification and Validation (IV&V) Facility.

6.1 IV&V Facility Becomes Aware of New Mission or Project

The IV&V Facility will become aware of new missions or Projects in a variety of ways including NASA Announcements of Opportunity and announcements by the Enterprises or Program Offices. Regardless of the method, Facility awareness of a new Project initiates this startup process and a new mission place holder.

6.2 Facility Review of New Mission or Project

The New Business Lead will review the available information about the new Mission or Project. The New Business Lead will review the new mission place holder, the announcement of opportunity and follow the proposal development if applicable. Based on this information, the New Business Lead will create a mission financial profile forecast in the Facility Mission Model and begin tracking the new mission. The New Business Lead will setup Self Assessment URL's for the Missions or Projects and provide Rough Order of Magnitude (ROM) estimates.

6.3 Project Completes IV&V Criteria Self Assessment

For competed missions, after the initial downselect, the Project will complete a new self assessment with the accepted proposal information and defined development approach for mission software.

6.4 Facility Reviews IV&V Criteria Self Assessment Results

The New Business Lead and cognizant Senior Lead will review the Self Assessment results and compare it to the Project data. The results will then be discussed with the Project to clarify the rationale and an approach determination will be made regarding the level of support (None, Independent Assessment or Independent Verification and Validation). If the level of support is agreed to be None, this conclusion will be recorded in the project file, and this process is

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complete. If the level of support is agreed to be Independent Assessment, a Facility Project Manager (PM) is assigned. The IA is then scoped and negotiated in accordance with IVV 09-2 and IVV 09-4 and this process is complete. If the level is IV&V, then this process continues.

6.5 Assign Project Manager for IV&V Projects

For projects requiring Independent Verification and Validation, a Facility PM will be assigned by the IV&V Services Lead in cooperation with the New Business Lead and the cognizant Senior Lead. The assigned PM will create a project file in accordance with IVV 09-4.

6.6 Initiate Startup Activities

The PM, cognizant Senior Lead, and COTR will work with the appropriate IV&V contractor to determine the approach and appropriate time to begin the startup activities for lifecycle IV&V.

6.7 Plan Startup Assessment and Negotiate Startup Assessment MOA

The IV&V PM and the cognizant Senior Lead will work together to plan the Startup Assessment and negotiate a formal agreement for the Startup Assessment with the Project or Mission PM in accordance with IVV 09-4. The schedule, tasks, and resources for the Startup Assessment should be tailored to the specifics of the Project or Mission; however, the following guidelines can be used as a starting point.

- 80 working days for the duration of the activities
- Deliver the Startup Assessment Report (SAR) at 60 working days or less
- Schedule delivery of SAR from contractor soon enough to accommodate peer review, and potential presentation scheduling with the Project or Mission
- Allow approximately \$55K (FY02 Dollars) for contractor costs
- Use the Startup Assessment MOA Template located on the Facility shared drive as a starting point. Discuss lessons learned with recent Startup Assessment PMs.

6.8 Conduct IV&V Startup Assessment

The IV&V PM will put a task order in place in accordance with IVV 09-4 to allow the contractor to begin the startup assessment. The IV&V PM is responsible for coordinating the startup activities with the Project or Mission PM including

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securing artifacts and other required project data. The PM shall take an active role in the Startup Assessment by participating in criticality and risk assessments, scope determination discussions, and other IV&V planning activities.

6.9 Prepare Startup Assessment Report

The IV&V PM shall ensure the preparation of a SAR that includes, but is not limited to, the following content:

- An identification of the Project/Mission “success criteria”;
- An identification of the Project/Mission level functional threads that are dependent on software and critical for mission success;
- A description of the software components or elements and the functional threads they support;
- The objectives of the IV&V effort (software certification, early detection of errors or both);
- For each software component/element,
 - An evaluation of the risk (severity criticality and likelihood of failure),
 - The specific rationale for the risk evaluation,
 - The recommended IV&V analysis tasks;
 - The rationale for recommending the tasks;
- A schedule for the IV&V tasks shown with respect to the software development schedule;
- The products of the IV&V effort (deliverables);
- An estimate of the magnitude of effort to accomplish the IV&V tasks, and the basis for this estimate; and
- An estimate of the costs for the IV&V effort.

6.10 Peer Review Startup Assessment Report

The SAR content will be subjected to an IV&V Facility peer review by other PMs to ensure that it is accurate, complete, consistent and ready for delivery to the Mission PM. The IV&V PM shall prepare a presentation summarizing the contents of the SAR to facilitate the peer review.

6.11 Deliver Startup Assessment Report

The SAR will be delivered to the Mission or Project PM to allow project review. At least two weeks should be given to facilitate questions regarding accuracy

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and to clarify any misinterpretation/misunderstandings between the two organizations.

6.12 Negotiate Formal Agreement for Lifecycle IV&V Activities

The process now proceeds to IVV 09-4 for the negotiation of the formal agreement and management of the lifecycle IV&V activities.

6.13 Control of Nonconforming Product

Because the IV&V Facility produces independent analysis products that customers may not agree with, disagreement with the analysis does not constitute a nonconformance subject to this section of this SLP. If the customer identifies a product produced by the IV&V Facility as nonconforming (i.e. an inappropriate format or because it was performed on the wrong customer product), the PM shall complete a Corrective/Preventive Action Request (C/PAR) form per IVV-14. The PM is responsible for resolving the issue with the customer. The C/PAR process insures Facility management is involved and that the problem is resolved and documented.

7.0 Metrics

This section is not applicable to this process.

8.0 Records

Refer to IVV 09-4 for applicable records requirements.